DOCUMENT RESUME

ED 365 051 EC 302 676

AUTHOR	Beckstead, Susan Porter; And Others
TITLE	An Analysis of Student Outcomes Associated with Educational Programs Representing Full Inclusion and Special Class Models of Integration.
INSTITUTION	San Francisco State Univ., CA. California Research Inst.
SPONS AGENCY	Office of Special Education and Rehabilitative Services (ED), Washington, DC.
PUB DATE	22 Jan 92
CONTRACT	G0087C3056-90; G0087C3058
NOTE	33p.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Delivery Systems; Elementary Education; Elementary School Students; High Schools; High School Students; Individualized Education Programs; Interaction Process Analysis; *Mainstreaming; Models; Normalization (Disabilities); *Outcomes of Education; Peer Relationship; *Program Effectiveness; *Severe Disabilities; Social Integration; *Special Classes
IDENTIFIERS	California

ABSTRACT

This descriptive study formulates a comprehensive picture of the structure, educational practices, and associated positive student outcomes of integrated programs for students with severe disabilities across a variety of California communities. Three of the seven participating programs represented the full inclusion model of integration implemented at the elementary level. Four of the programs represented special class models of integration; two were located at elementary schools and two at high schools. The study presents descriptive information on each of the models of integration, with quantitative measures of positive student outcomes. Outcome measures in this preliminary study were restricted to the quality of the students' individualized education programs (IEP), the extent of integrated activities for each child across the school day, and the extent and type of interactions occurring between the students with disabilities and their nondisabled schoolmates. Findings included the following: (1) the high school special class model received the highest rating for quality of IEPs; (2) students in the full inclusion programs spent an average of 94 percent of school hours in integrated settings; and (3) the amount of reciprocal interaction was almost identical across the three models. (Contains 37 references.) (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

EC

ED 365 051

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

An Analysis of Student Outcomes Associated with Educational Programs Representing Full Inclusion and Special Class Models of Integration[1]

Susan Porter Beckstead, Pam Hunt, Lori Goetz,
& Patricia Karasoff

California Research Institute

San Francisco State University

Ann Halvorsen

PEERS Project

California State University, Hayward

Running Head: Analysis of Student Outcomes

[1] This research was supported in part by U.S. Department of Education Cooperative Agreements #G0087C3056-90 and #G0087C3058. The content and opinions expressed herein do no necessarily reflect the position or policy of the U.S. Department of Education, and no official endorsement should be inferred.

The authors would like to thank Carola Murray-Seegart, Elizabeth Kozleski, Debbie Tweit, Kathryn Haring, Felicia Farron-Davis, Debbie Staub, Lynn Smithey, Tom Neary, Jenny Coots, Dona Meinders, Lauri Triulzi, and the teachers and administrators in all participating sites.

EC 302676

Abstract

This descriptive study is an initial effort to provide a comprehensive picture of the structure, educational practices, and associated positive student outcomes of integrated programs for students with severe disabilities across a variety of California communities. Three of the seven participating programs represented the full inclusion model of integration implemented at the elementary school level. Four of the programs represented special class models of integration; two were located at elementary schools and two at high schools. The study presents descriptive information on each of the models of integration with quantitative measures of positive student outcomes associated with each model. Outcome measures in this preliminary study were restricted to the quality of the students' individualized education programs (IEPs), the extent of integrated activities for each child across the school day, and the extent and type of interactions occurring between the students with disabilities and their nondisabled schoolmates.

An Analysis of Student Outcomes Associated with Educational Programs Representing Full Inclusion and Special Class Models of Integration

The past decade of special education services for students considered to have severe disabilities can be characterized as a period of 'progressive inclusion' (Reynolds & Birch, 1982). However, as recently as 1975, with the passage of P.L. 94-142, the Education for All Handicapped Act, many states and localities responded to this law's *least restrictive environment* principle by constructing new or additional segregated, disabled-only facilities for these students (Sailor, Anderson, Halvorsen, Filler, Doering, & Goetz, 1989). The full history of services to this population has been described in detail elsewhere, (e.g., Brown, Nisbet, Ford, Sweet, Shiraga, York, & Loomis, 1983; Meyer & Putnam, 1983), but it is instructive to note that the prevalent assumption at that time was that these centers comprised the least restrictive learning environment for students with significant disabilities, the majority of whom had been excluded from any sort of public education previously.

Since 1975, extensive research and practice have demonstrated repeatedly the inherent fallacy of this assumption, and the efficacy of integration for students with severe disabilities (see Halvorsen & Sailor, 1990 for review). Integrated education has been shown to enhance achievement of IEP objectives (e.g., Brinker & Thorpe, 1984), interactive social skill development and communicative skills (e.g., Cole, Meyer, Vandercook, & McQuarter, 1986; Goldstein & Wickstrom, 1986; Hunt, Alwell, & Goetz, 1988), skill generalization (e.g., Gee & Goetz, 1985, 1986; Goetz & Gee, 1987; Sailor, Goetz, Anderson, Hunt, & Gee, 1988), and post-school integration (e.g., Hasazi, Gordon, Roe, Finck, Hull, & Salembier, 1985; Piuma, 1989).

Current debate has focused increasingly on analyses and contrast among a variety of *integrated* models within general education settings (Brown, Long, Udvari-Solner, Davis, VanDeventer, Ahlgren, Johnson, Gruenewald, & Jorgensen, 1989a, 1989b; Raynes, Snell, & Sailor, in press; Sailor, et al., 1989; Williams, Villa, Thousand, & Fox, 1989; York, Vandercook, MacDonald, & Wolff, 1989). Central to the discussion regarding preferred integration models is the issue of "home school," or students' attendance at the schools they would attend if they did not have a disability. While it may be "administratively

inconvenient" to provide necessary support services at each student's home school (Sailor, Gerry, & Wilson, in press), doing so may well facilitate the other critical aspects of a quality integration program noted above, such as heterogeneous groupings, natural proportion of students with disabilities, participation in all aspects of daily school life, and the development of sustained social relationships among typical students and their peers with disabilities (Brown et al., 1989a, 1989b; Sailor, Gerry, & Wilson, in press; Thousand & Villa, 1989). Since attendance at one's home school generally will result in a natural proportion of students as well as diversity among these students in terms of age, specialized needs and related factors, it may in turn lessen any undue impact on general educators' class sizes as students are included. This is less likely to create a "we-they" atmosphere within the school than when students with disabilities are clustered together for administrative convenience (Brown et al., 1989a; York et al., 1989). In addition, as Brown and his colleagues noted (1989a), the home school can provide the most meaningful and individually appropriate instructional environments, while giving parents and siblings increased access to services for and with the student. Thus, home school attendance can assist students with disabilities to become true members of their school community, rather than simply "visitors."

As the home school has become the setting of choice for implementation of the comprehensive local school model, the debate has shifted to consideration of the primary location for delivery of the student's educational program within the school. Numerous authors have presented cogent arguments in the form of position papers (Forest, 1987; Stainback & Stainback, 1987; Strully & Strully, 1989; York et al., 1988) and entire textbooks (e.g., Stainback, Stainback, & Forest, 1989) which support basing students in their age and grade-appropriate general education classes for all or significant portions of the school day (Raynes, Snell, & Sailor, in press; Sailor et al., 1989).

This integration model has become known as *full inclusion*, *inclusive education*, or *supported education* (Forest & Lusthaus, 1989; Snow, 1989; Stainback, Stainback, & Forest, 1989). Qualitative evidence (e.g., Schnorr, 1990) and anecdotal accounts have supported the belief that anything short of full time regular class membership merely reinforces notions of "otherness," or the perception of the student with disabilities as a mere visitor to the school community (Biklen, 1989; Schnorr, 1990). Some

have argued that the central question of interest is less one of full time general class placement than it is one of appropriate curriculum adaptation to address individual students' needs within the regular class and surrounding school (c.f., Williams et al., 1989). While other authors seem to suggest that the regular class is an inadequate setting to address the learning and performance characteristics of students with severe disabilities (Brown, Schwartz, Udvari-Solner, Kampschroer, Johnson, Jorgensen, & Gruenewald, 1991), some purport that appropriate individualized modifications and support services can facilitate meaningful inclusion of *all* students.

Sailor's definition of full inclusion (1990, personal communication) addresses the critical points of this discussion:

- There is natural proportion of the students with severe disabilities at a school site and assignment to general education classrooms;
- Primary membership for the student with disabilities is an age-appropriate general education classroom;
- No special education classroom exists, except as a place for integrated activities;
- The IEPs for the students with severe disabilities are written and implemented by both the regular and special education teacher, and the ancillary staff;
- The students with disabilities receive support within the general education program from special education staff; and
- Students with disabilities attend the school that they would attend if nondisabled, or a school of choice within a reasonable transportation distance.

As the movement toward inclusive education undergoes rapid growth throughout California and the nation, the authors and their colleagues at the California Research Institute and the state's systems change project, PEERS (Providing Education for Everyone in Regular Schools) became interested in numerous questions related to the program components and the student outcomes associated with inclusive, general class placement and integrated models operating from a special class within regular schools. Despite the burgeoning literature in support of full inclusion, minimal hard data exist which

document how inclusion occurs and what it "looks like" across grade levels, as well as the efficacy of these programs.

The present study is an initial effort to provide a comprehensive picture of the structure, educational practices, and associated positive student outcomes of integrated programs for students with severe disabilities across a variety of California communities. Three of the seven participating programs represented the full inclusion model of integration implemented at the elementary school level. Four of the programs represented special class models of integration, two of which were located at elementary schools and two at high schools. The purpose of the study was to combine ***descriptive information*** on each of the models of integration (i.e., elementary full inclusion, elementary special class, and high school special class) with ***quantitative measures*** of positive student outcomes associated with each model. Outcome measures in this preliminary study were restricted to the quality of the students' individualized education programs (IEPs), the extent of integrated activities for each child across the school day, and the extent and type of interactions occurring between the students with disabilities and their nondisabled schoolmates.

Method

Participants

Selection of Participating Educational Programs

The California State Department of Education currently supports a network of California Implementation Sites for programs serving students with severe disabilities through: (a) TRCCI (Training and Resources for Community and Curriculum Integration), the California State Department of Education's inservice training unit; and (b) PEERS (Providing Education for Everyone in Regular Schools), the federally sponsored California Statewide Systems Change grant project. Each of the seven programs selected for participation in the study met the criteria related to philosophy, curriculum development, instructional practices, home-school interaction, and instructional team development required for inclusion as a TRCCI or PEERS implementation site.

The four special class programs were located on regular elementary and high school campuses. The classrooms were surrounded by general education classrooms for students of the same age group. The curriculum included instruction in both functional and academic skill areas. The students with disabilities participated in all general school activities including recess, lunch in the cafeteria, assemblies, physical education, and extracurricular activities.

For the three full inclusion programs, the students with disabilities attended the school that they would have attended if they were nondisabled (or a school of choice within a reasonable transportation area), and were full time members of age-appropriate, general education classrooms. As in the special class programs, the curriculum included instruction in both functional and academic skill areas. Other criteria for identification and selection as a full inclusion program were taken from Sailor's definition (see above) of the full inclusion model of integration (1990, personal communication).

Selection of Students within Each Participating Program

Initially, the special education teachers were asked to randomly select four students in their program who had been identified by school district psychologists as "severely disabled"; however, the students finally included in the study, from the group who were initially selected, were those for whom CRI research staff were able to implement each of the three evaluation instruments related to the quality of their IEPs, the extent to which they participated in integrated activities across the school day, and the quantity and quality of their social interactions with their nondisabled schoolmates. (See the section below entitled "Quantitative Measures" for a description of each evaluation instrument.) Time constraints for on-site evaluation and student absences restricted the number of participating students to three for five of the programs and two for two of the programs.

The Student Descriptor Scale (SDS) (Goetz, Haring, & Gee, 1991) was used to further describe the ability level of the students selected. The SDS consists of nine characteristics: intellectual disability, health impairment, need for toileting assistance, upper torso motor impairment, communication disorder, environmental responsivity, sensory impairment, and behavior disorder. Those characteristics that were present were rated on a 1-6 Likert scale according to the degree of the characteristic, with 1 = moderate and 6 = profound. After a 10-minute observation of the student by the researcher, a brief interview was

conducted with the teacher concerning characteristics on four items (presence of a health condition, assistance needed for toileting, sensory impairment, and behavior disorder) that may not have been observable during the observation sample, and scores on those items were adjusted accordingly.

Table 1 presents the Student Descriptor Scale scores for each of the participating students, and other student characteristics. Eighteen of the students were judged to be at least moderately intellectually disabled with the exception of one student who attended Program 4 and was identified by the school district as severely emotionally disabled. Seventeen of the nineteen students received SDS scores of 13 and below. Two students, one from a full inclusion program and one from a special class (high school) program received a score in the low twenties.

Insert Table 1 about here

The Three Full Inclusion Programs

Program 1. Program 1 was designed to provide educational support to seven elementary-aged students with severe disabilities who attended one elementary school in a rural community in the central valley of California. The school district served approximately 1,500 students in their kindergarten through high school programs. The students with severe disabilities were full-time members of six different general education classrooms. One special educator was assigned to the program and provided support services through consultation with the general education teachers. In addition, the special educator and one full-time and one part-time paraprofessional provided direct instruction within the general education classroom and community. Those students observed for the study who attended this program were Cathy, Dave, and Evan. Each of the students was ambulatory, used speech and gestures to communicate, was toilet trained, and experienced moderate mental retardation. The majority of the students' IEP objectives were implemented within the general education context. The students with disabilities participated in an adapted general education curriculum delivered in both cooperative learning and direct instructional contexts. Students received some community-based instruction outside of the general education environment.

Program 2. Program 2 included ten elementary-aged students with severe disabilities across three elementary schools in a suburban university community in the central valley of California. The school district served approximately 6,000 students, kindergarten through high school. The students with severe disabilities were full time members of general education classrooms. One itinerant special educator provided consultation to the students' general education teachers. Additionally, she and two paraprofessionals provided direct instruction in the classroom and in the community. Students participated in a combination of small and large group instruction, cooperative learning, and individualized instruction in the general education classroom. The students observed for the study were Art and Ann. Art experienced moderate mental retardation. He communicated through gestures and some speech. He was ambulatory and participated independently in daily living activities. Ann experienced severe intellectual disability. She was habit trained, was learning to use a walker, and was increasing her use of manual signs and gestures for communication.

Program 3. Program 3 included two elementary-aged students with severe disabilities who attended two elementary schools in a large, ethnically diverse urban school district in southern California. The district served 200,000 students from kindergarten through high school. The students were educated within general education classrooms for the majority of the day. The program was served by one itinerant special education teacher. One paraprofessional was assigned to each general education classroom. The special education teacher provided consultation to the general education teachers and some direct instruction in the classrooms and in the community. Instruction in the classroom was delivered through a combination of modified and parallel activities in cooperative learning, small group, large group, and individualized instructional activities. In addition to support from special education staff, some classmates were available to assist the students with educational tasks, while other classmates served as "buddies" for their classmate with disabilities, facilitating his or her participation in art, music, physical education and other socially-oriented activities. The students observed for the study, Mark and Saul, experienced moderate mental retardation. The two students were ambulatory and independently participated in the activities of daily living. They initiated social interactions with peers and communicated with manual signs, gestures, and some speech.

Special Class Programs (Elementary)

Program 4. Nine students attended this special class program. Four of the students were identified as experiencing severe intellectual disabilities. It was located on an elementary school campus in an ethnically diverse university community in northern California. The school district served approximately 7900 students in their kindergarten through high school programs. Although the special education classroom served as the educational base for the program, the students were mainstreamed into general education classes for some portion of the day and participated in some educational activities in community settings. One special education teacher and two paraprofessionals were assigned to the program. They provided direct instruction to the students in special and general education classroom settings as well as in the community. In addition, the special education teacher provided consultation to the general education teachers on curricular adaptations and other strategies to include the students with disabilities in the academic and social activities of the general education classroom. A structured interaction program, focusing on the Circle of Friends activity (Forest & Lusthaus, 1989), was utilized to promote social interaction and friendships between the students with disabilities and their general education classmates. Two of the students observed for the study, Manny and Linda, experienced severe emotional disabilities that resulted in a delay in both academic and social development. Sam was diagnosed as autistic. The students experienced moderate (two students) to mild (one student) intellectual disability. All three students were verbal, ambulatory, and participated independently in the activities of daily living.

Program 5. Program 5 included 18 students with severe disabilities who attended two special classes located at an elementary school in a suburban, ethnically-mixed community in southern California. The school district educated 12,000 students in their kindergarten through high school programs. The special classes were served by two special education teachers and two paraprofessionals. The students spent the majority of the day in the special class and participated in some community-based activities each week. Two students were mainstreamed into general education classrooms for academic or nonacademic activities. All students participated in recess, lunch, and other school events. There was a "reverse integration" program that occurred throughout the day in which general education students

came to the special education classroom for structured peer tutoring and informal leisure activities. The three students observed for the study, Arturo, April, and Bob, experienced moderate mental retardation. The students were ambulatory, communicated effectively with speech, and participated independently in the activities of daily living.

Special Class Programs (High School)

Program 6. Program 6 included ten students with severe disabilities who attended a special class in a high school located in a large, diverse metropolitan city in northern California. The school district served approximately 63,000 students in their kindergarten to high school programs. A special education teacher and two paraprofessionals were assigned to the program. The students spent the majority of their day in community-based job and domestic sites. A small number of students in the program participated in non-academic general education classes (e.g., practical art and physical education) without support from special education staff. All the special education students attended school-wide activities (e.g., lunch, football games, school assemblies). Some general education students participated in the special education program as teaching assistants (i.e., they spent one class period per day as peer tutors and received course credit). The three students observed for the study were Alice, Lauri, and Jeff. Each experienced moderate intellectual disability. Alice was ambulatory and independently participated in the activities of daily living. She communicated effectively through speech. Lauri exhibited a variety of aggressive and other inappropriate behaviors. She was verbal, ambulatory, and participated independently in daily living activities. Jeff was blind and used a cane for mobility with assistance from the teacher or paraprofessional. He was able to communicate through gesture, facial expression, body movement, and some speech.

Program 7. Program 7 included nine students with severe disabilities who attended a special class located at a high school in a suburban/rural university community in northern California. The school district in which the program was located served approximately 9,000 students in its kindergarten through high school programs. One special education teacher and two paraprofessionals were assigned to the program. The students spent the majority of their day engaged in educational activities in general education classrooms and community settings. Eight students participated in "elective" general

education classes through an adapted curriculum. Two students attended an English class. Peer buddies and paraprofessionals were utilized to support students during these classes. Other interactions with nondisabled schoolmates occurred through participation in school events and extra-curricular activities and through the use of "reverse integration" in which general education students served as peer tutors in the special education classroom. The three students participating in the study were Joe, Rhonda, and Terry. Rhonda experienced blindness and severe intellectual disability. Her communication system included gestures and signs, and she was learning to participate in a number of independent living skills including toileting. Joe and Terry were moderately intellectually disabled, independently participated in the activities of daily living, and communicated through signs, gestures and some speech. In addition, Jerry frequently exhibited a variety of inappropriate behaviors.

Evaluation Measures and Instrumentation

The instrumentation and evaluation measures in the three major evaluation areas: the quality of the students' IEPs, the extent of integrated activities across the school day, and the extent and type of interactions between the students with disabilities and their nondisabled schoolmates, are described below.

Quality of IEP Objectives

The IEP Evaluation Instrument developed by Hunt Goetz, and Anderson (1986) was used to measure the quality of IEP objectives on the basis of the degree to which they included seven components which are "indicators of best practices" for programs for students with severe disabilities (Brown et al., 1979; Falvey, 1986; Sailor & Guess, 1983). These seven components fall within three categories: age-appropriateness (of the materials and the task), functionality (a basic skill, a critical activity, or an interaction activity), and potential for generalization to a variety of environments (taught across a variety of settings and materials). Summary measures of the degree of the presence of these indicators of best practices were used as the basis for rating the quality of IEPs developed for students in each of the participating programs. The procedures implemented to determine both the validity and reliability of the IEP Evaluation Instrument are described in Hunt et al. (1986).

Each of the participating teachers submitted IEPs written for participating students. Two IEPs per site were randomly selected. Six randomly selected objectives from each IEP (with the exception of Program 7 IEPs, which included only four objectives) were rated using the data format presented in Figure 1. In the far left column is a list of the seven "indicators of best practices" within the three areas of age-appropriateness, functionality, and potential for generalization to a variety of environments. A definition is given for each indicator. A set of guidelines and examples which clarify the definitions is included in the instrument manual (Hunt, 1986). The data sheet provides space to rate 12 objectives. One point is scored for each of the indicators included in an objective with a total of seven points possible per objective. The summary scores for the occurrence of each of the indicators across objectives are recorded. The score used to determine the overall quality of the IEP is the percentage of points obtained across all objectives on a single IEP, out of the total points possible.

Insert Figure 1 about here

Reliability checks were conducted by independent raters on six of the fourteen IEPs (43%). Objective by objective agreement for each indicator was calculated by dividing the number of rater agreements by the total number of agreements plus disagreements, times 100%.

Integrated Activities

The degree to which students placed in special classes or general education programs were involved in "integrated" activities (i.e., activities that included the presence of nondisabled peers) was measured using an adapted version of the schedule analysis tool developed by Halvorsen, Beckstead, and Goetz (1990). The purpose of the *Schedule Analysis* is to systematically examine the weekly activities of participating students to determine the percent time per week spent in integrated school and community environments and the opportunities provided for interactions with same-age (i.e., ± 2 years), nondisabled peers.

The schedule for each of the participating students was analyzed with input from the teacher. For each occurrence of an integrated activity, the following information was recorded:

a) the time period in which the activity occurred;

b) the specific activity (e.g., shopping, collecting attendance, eating lunch, science, reading) and its location (e.g., Lucky's Supermarket, cafeteria, general education classroom); and

c) identification of the nondisabled individuals present during the activity (e.g., peer tutor, community people, store clerks, classmates).

From this recorded information, an analysis was done of the percent time each week that students spent a) with nondisabled peers in joint school activities, b) with nondisabled school peers in off campus, community activities, c) with other nondisabled individuals in community activities, d) in general education classrooms, and e) overall, in integrated activities.

Extent and Type of Interactions with Nondisabled Peers

The extent and type of interactions between the participating students and their nondisabled peers were measured using an adaptation of the EASI Social Interaction Scale (Goetz, Haring, & Anderson, 1983) developed by Beckstead & Goetz (1990). The instrument uses an interval recording procedure. Data were collected during five to six 10-minute observational sessions over a two-day period. The observational periods were randomly selected and reflected both morning and afternoon activities. Each observational period consisted of 20 intervals of 15 seconds of observation and 15 seconds of recording. The following items were recorded for each interval: (a) an initiated interaction (verbal or nonverbal) by the student with disabilities or his or her partner (nondisabled peer, disabled peer, teacher, or other adult); (b) acknowledgement of an initiated interaction by the student with disabilities or his or her partner; and (c) the type of interaction (task or social). A "reciprocal interaction" was scored for intervals in which there was both an initiation by one individual and an acknowledgement by the other.

EASI data were collected on each of the participating students. The following analyses were made:

a) the percent of intervals across the five or six 10-minute observational periods in which a reciprocal interaction occurred;

b) for those intervals in which a reciprocal interaction occurred, the percent that were initiated by the student with disabilities and the percent initiated by the partner;

c) for those intervals in which the interaction was initiated by a partner, the percent that were teacher, other adult, nondisabled peer, or disabled peer initiated; and

d) for those intervals in which the interaction was initiated by the student with disabilities, the percent that were peer, teacher, or other adult directed.

Interrater reliability data were gathered on seven of the participating students (37%): three students in Program 4, two students in Program 6, and two students in Program 7. The extent of agreement was analyzed for the occurrence or nonoccurrence of initiations and acknowledgements by the students with disabilities or their partners and for the type of interaction (i.e., either social or task related). Interrater agreement was determined by dividing the number of agreements on the occurrence of each item within an interval by total number of agreements plus disagreements, times 100%.

Data Collection Procedures

Quantitative measures were gathered by trained data collectors. They conducted the Schedule Analysis with input from the special education teachers, implemented the EASI interval recording procedure for the five or six, 10-minute observational periods, and gathered the IEPs written for two participating students.

The Principal Investigator and/or research assistants from the California Research Institute and PEERS visited each program for at least a two-day period to gather Student Descriptor Scale data and serve as an independent observer for reliability measures for the EASI. Additionally, she observed the students and activities of the school day and interviewed staff, students, administrators, and parents when possible. Program descriptions reflecting the information obtained through observation and interview were written in narrative form and reviewed by the special education teachers, the data collectors, and the PEERS coordinators for accuracy. The IEP analysis was implemented by the Principal Investigator, and additional analyses were completed by an independent rater for reliability purposes.

Results

Reliability of the Dependent Measures

Reliability assessments were completed on the measurement of two of the three dependent variables: the quality of the students' IEPs (measured with the IEP Evaluation Instrument) and the extent and type of social interactions with nondisabled peers (measured with the EASI Social Interaction Scale). Because the third dependent variable, the extent of integrated activities, was evaluated through a review of documents (i.e., the students' weekly schedules) and did not require a quality review of these schedules nor any observational measures, reliability checks were not conducted.

The IEP evaluation instrument. Reliability checks were implemented by an independent rater using the IEP evaluation instrument on six of the 14 IEPs submitted for participating students. The mean percentage of interrater agreement on the presence or absence of the seven "indicators of best practices" across six randomly selected IEP objectives was 93% (range: 86 to 98%).

The EASI social interaction scale. Reliability data for the EASI were gathered on an average of 41% of the 10-min observational periods for seven of the 19 students. The mean percentage of agreement on the occurrence or nonoccurrence of initiations and acknowledgements by the students with disabilities or their partners and on the type of interaction (i.e., either social or task related) was 92% (range: 84 to 100%).

Evaluation of the Quality of IEP Objectives

Overall IEP quality scores and scores on the inclusion of individual "indicators of best practices" were calculated for each of the three integration models. These scores, which are presented in Figure 2, represent the average scores across each of the individual programs representing that model.

Insert Figure 2 about here

Evaluation of the Extent of Integrated Activities

Figure 3 presents the average scores across programs for each of the three integration models on the percent time per week that the participating students spent in integrated settings. Percent time in

integrated settings is then further analyzed according to the following sub-categories: time with nondisabled peers in school activities, time with nondisabled peers in community activities, time with non-school peers in community activities, and time in a general education classroom.

Insert Figure 3 about here

Evaluation of the Extent and Type of Interactions with Nondisabled Peers

Figure 4 presents the outcomes for the analysis of social interaction for each of the three integration models. The first set of outcomes described are the percent of observational intervals in which reciprocal social interactions occurred. The second analysis is the percent of intervals in which reciprocal interactions occurred that were initiated by either the disabled student or "other individual." The final set of outcomes describe for those intervals that were "other" initiated, the percent that were initiated by the student's teacher, another adult, a nondisabled peer, or a disabled peer.

Insert Figure 4 about here

Discussion

This descriptive study is a preliminary review of integrated educational programs for students with severe disabilities across a variety of California school districts. Each of the seven participating programs was nominated for inclusion in the study because it demonstrated exemplary practices in the areas of curriculum development and implementation and the extent to which its students were integrated into school and community settings and activities. The seven programs represented three integration models: full inclusion at the elementary level and special class models at the elementary and high school levels. The study describes each integration model as it is translated into the practices of individual programs. Program descriptions are combined with evaluation measures of student outcomes associated with each model of integration. The evaluation outcomes can then be reviewed to analyze the strengths

and weaknesses of each integration model. Based on this preliminary analysis, recommendations can be made for future research activities to confirm identified patterns and expand integrated program evaluation activities.

Before program evaluation outcomes are reviewed, it is necessary to caution that the ability to make generalized statements about full inclusion or special class models of integration based on the evaluation data produced by this study are significantly limited by the selection of participating programs: that is, all programs were selected from California school districts, the number of programs representing each model is very small (i.e., two or three), and each of the participating programs were exemplary examples of the models they represent. This study, however, was not intended to make definitive statements about relative integration model effectiveness. It was designed as a preliminary investigation to highlight trends found within a small sample of exemplary integrated programs in order to guide future program evaluation efforts.

Program Evaluation Outcomes

Quality of IEP objectives. As described in Figure 2 the high school special class model of integration received the highest percent points for overall IEP quality (85%) as evaluated by the IEP Instrument, followed by the full inclusion model with 71% and the elementary special class model with 60%. Each of the three integration models received high scores for IEP objectives that included age-appropriate tasks and materials. Basic communication, social, motor, and academic skills development were included in 78% of the objectives for full inclusion programs, 85% of the objectives for elementary special class programs, and 69% of the objectives for high school special class programs.

IEP objectives written for programs in the high school special class model included a substantially higher percent of targeted critical activities (79%) than IEP objectives written for the elementary special class programs (34%) or the full inclusion programs (53%). This may reflect a shift in curriculum priorities at the high school level to domestic, community, and vocational skills development as advocated in functional, community-based curriculum models (c.f. Sailor et al., 1988).

Ninety-four percent of the IEP objectives written for students in the full inclusion programs included an opportunity for social interaction with nondisabled peers. This represents a significantly

higher level of interaction opportunities than IEP objectives written for special class elementary programs (46%) or special class high school programs (75%). Greater opportunity for social interaction within educational activities would be expected when students are full-time members of general education classrooms.

A substantially higher percentage of objectives written for the special class high school programs included the two quality indicators related to the promotion of generalized performance: that is, 71% of the objectives were taught across settings, and 96% of objectives were taught in natural settings. Only fifty-five percent of the objectives written for both full inclusion elementary and special class elementary programs were taught in the natural setting; and only 31% of objectives in full inclusion programs and 25% of objectives in elementary special class programs were taught across settings. Since multiple, natural environment instruction has been repeatedly identified as a key factor in the promotion of generalized performance of new skills (c.f., Sailor et al., 1988; Stokes & Baer, 1977), these trends should be flagged for further investigation in future program evaluation efforts.

Integrated activities. A review of the weekly schedules of students in full inclusion programs revealed that, on the average, the students spent 94% of school hours per week in integrated environments (see Figure 3): 92% with nondisabled peers in school activities (including 74% of the time in general education classrooms) and 2% of the week in community environments with school and non-school peers.

Students in special class elementary programs spent 78% of the school week in integrated environments: 73% with nondisabled peers in school activities and 5% in integrated community activities. Students were included in general education classroom activities 19% of the time per week. Students in the special class high school programs spent a similar number of hours per week in integrated environments (73%); however, there were fewer hours spent in integrated school activities and more hours spent with peers in community activities. These outcomes are consistent with the findings in the IEP analysis of more multiple, natural environment instruction for the high school special class programs.

An interesting finding across both types of programs was the minimal amount of community programming that included nondisabled peers from school (.7%). These data suggest a need to consider

new strategies for the ongoing, meaningful participation of nondisabled school peers within community instruction to ensure continuity of programming as well as meaningful interaction opportunities (cf., Ford & Davern, 1989).

Extent and type of interactions with nondisabled peers. As is described in Figure 4, the percent of intervals in which a reciprocal interaction was recorded, using the EASI Social Interaction Scale, was almost identical across the three models with 47%, 47%, and 45% for full inclusion, special class elementary, and special class high school programs, respectively. However, as the analysis was further refined to reflect the percent intervals of reciprocal interactions that were disabled student or "other" person initiated, differences between models emerged (see the second bar graph in Figure 4). A higher percent of interactions were initiated by the students with disabilities in the elementary special class program (44%) than the full inclusion (28%) or high school special class programs (35%). These outcomes may reflect the ability level of the students, with students who experience fewer, or less extensive disabling conditions initiating social interactions to a greater degree. The Student Descriptor Scale scores (see Table 1) for the students in the elementary special programs were somewhat lower than the other two programs, thereby reflecting lower levels of disability.

The number of reciprocal interactions initiated by "others" was substantially higher for the full inclusion elementary programs (72%) than the special class elementary programs (56%). Furthermore, while the percent of intervals initiated by adults was very similar across the three integration models (see the third bar graph in Figure 4), there were substantial differences between the models in the number of interactions that were nondisabled peer- or disabled peer-initiated. In the full inclusion programs 30% of interactions were nondisabled peer initiated, and none were disabled peer initiated. The reverse is true of the elementary special class program: that is, only 1.5% of interactions were nondisabled peer initiated and 31% were disabled peer initiated. These data indicate that although students in special class programs at the elementary level spent the majority of their day in integrated settings (as is described in Figure 3), nondisabled peers in those environments were not initiating interactions with the students with disabilities. This may also be a function of the type of integrated settings and activities in which these students were engaged. For example, in Program 5 the primary "integrated" environment was the

special class with nondisabled peers present. The analysis of the high school special class interaction patterns reveals an increase in nondisabled peer-initiated interactions to 20% of the observational intervals.

Future Research

The data generated by this preliminary program evaluation study represent only an initial attempt to identify the strengths and weaknesses of full inclusion and special class models of integration. Future research efforts are needed to not only investigate larger numbers of programs representing each integration model, but also to expand targeted student outcome measures. In addition to evaluations of IEP quality, social interactions, and integrated activities, analyses are needed of other key outcome variables including student progress on IEP objectives, parent and student satisfaction, the existence of social networks for the students with disabilities, and the extent to which students are actively engaged in the activities of the school day. The research bases for and a fuller understanding of the outcomes of various integrated placement models for students with severe disabilities are urgently needed if policy, placement decisions, and program design are to be guided by sound empirical evidence.

References

Beckstead, S., & Goetz, L. (1990). The EASI scale (revision 5). Unpublished manuscript. San Francisco: San Francisco State University, California Research Institute.

Biklen, D. (1989). Making difference ordinary. In S. Stainback, W. Stainback, & M. Forest (Eds.), Educating all students in the mainstream of regular education (pp. 235-248). Baltimore: Paul H. Brookes.

Brinker, R.P., & Thorpe, M.E. (1984). Integration of severely handicapped students and the proportion of IEP objectives achieved. Exceptional Children, 51(2), 168-175.

Brown, L., Branston, M., Hamre-Nietupski, S., Pumpian, I., Certo, N., Gruenewald, L. (1979). A strategy for developing chronological age-appropriate and functional curricular content for severely handicapped adolescents and young adults. Journal of Special Education, 13, 81-90.

Brown, L., Long, E., Udvari-Solner, A., Davis, L., VanDeventer, P., Ahlgren, C., Johnson, F., Gruenewald, L., & Jorgensen, J. (1989a). The home school: Why students with severe intellectual disabilities must attend the school of their brothers, sisters, friends, and neighbors. Journal of The Association for Persons with Severe Handicaps, 14(1), 1-7.

Brown, L., Long, E., Udvari-Solner, A., Davis, L., VanDeventer, P., Ahlgren, C., Johnson, F., Gruenewald, L., & Jorgensen, J. (1989b). Should students with severe intellectual disabilities be based in regular or in special education classrooms in home schools? Journal of The Association for Persons with Severe Handicaps, 14(1), 8-12.

Brown, L., Nisbet, J., Ford, A., Sweet, M., Shiraga, B., York, J., & Loomis, R. (1983). The critical need for nonschool instruction in educational programs for severely handicapped students. Journal of The Association for Persons with Severe Handicaps, 8, 71-77.

Brown, L., Schwarz, P., Udvari-Solner, A., Kampschroer, Johnson, F., Jorgensen, J. & Gruenewald, L. (1991). How much time should students with severe intellectual disabilities spend in regular education classrooms and elsewhere? Journal of The Association for Persons with Severe Handicaps, 16(1), 39-47.

Cole, D.A., Meyer, L.M., Vandercook, T., & McQuarter, R.J. (1986). Interactions between peers with and without severe handicaps: The dynamics of teacher intervention. American Journal of Mental Deficiency, 9(2), 160-169.

Falvey, M. (1986). Community-based curriculum: Instructional strategies for students with severe handicaps. Baltimore: Paul H. Brookes.

Ford, A., & Davern, L. (1989). Moving forward with school integration: Strategies for involving students with severe handicaps in the life of the school. In R. Gaylord-Ross (Ed.), Integration strategies for students with handicaps (pp. 11-32). Baltimore: Paul H. Brookes.

Forest, M. (Ed.) (1987). More education/integration. Downsview, Ontario, CANADA: G. Allan Roeher Institute.

Forest, M., & Lusthaus, E. (1989). Promoting educational equality for all students: Circles and maps. In S. Stainback, W. Stainback, & M. Forest (Eds.), Educating all students in the mainstream of regular education (pp. 43-57). Baltimore: Paul H. Brookes.

Gee, K., & Goetz, L. (1985). Outcome of instructing orientation and mobility skills across purposeful travel in natural environments. Unpublished manuscript. San Francisco: San Francisco State University, Department of Special Education.

Gee., K., Goetz, L. (1986). Establishing generalized use of residual vision through instruction in natural contexts. Unpublished manuscript. San Francisco: San Francisco State University, Department of Special Education.

Goetz, L., & Gee, K. (1987). Functional vision programming: A model for teaching visual behaviors in natural contexts. In L. Goetz, D. Guess, & K. Stremel-Campbell (Eds.), Innovative program design for individuals with dual sensory impairments (pp. 77-99). Baltimore: Paul H. Brookes.

Goetz, L., Haring, T., & Anderson, J. (1983). The educational assessment scale for social interaction (EASI). Unpublished manuscript. San Francisco: San Francisco State University, California Research Institute.

Goetz, L., Haring, K., & Gee, K. (1989). Student descriptor scale. Unpublished manuscript. San Francisco: San Francisco State University, Department of Special Education.

Goldstein, H., & Wickstrom, S. (1986). Peer intervention effects on communicative interaction among handicapped and nonhandicapped preschoolers. Journal of Applied Behavior Analysis, 19, 209-214.

Halvorsen, A., Beckstead, S., & Goetz, L. (1990). Schedule analysis instrument. San Francisco: San Francisco State University, California Research Institute.

Hasazi, S., Gordon, L., Roe, C., Finck, K., Hull, M., & Salembier, G. (1985). A statewide follow-up on post high school employment and residential status of students labeled "mentally retarded." Education and Training of the Mentally Retarded, 20(4), 222-234.

Hunt, P., Alwell, M., & Goetz, L. (1988). Acquisition of conversation skills and the reduction of inappropriate social interaction behaviors. Journal of The Association for Persons with Severe Handicaps, 13(1), 20-27.

Hunt, P., Goetz, L., & Anderson, J. (1986). The quality of IEP objectives associated with placement on integrated versus segregated school sites. Journal of The Association for Persons with Severe Handicaps, 11(2), 125-130.

Meyer, L., & Putnam, J. (1987). Social integration. In V.B. Van Hasselt, P. Strain, & M. Hersen (Eds.), Handbook of developmental and physical disabilities (pp. 107-133). New York: Pergamon.

Piuma, C. (1989). Benefits and costs of integrating students with severe disabilities into regular public school programs: A study summary of money well spent. Unpublished manuscript. San Francisco: San Francisco State University, Department of Special Education.

Raynes, M., Snell, M., Sailor, W. (in press). Send kids with special needs out or bring specialized staff in? A fresh look at categorical programs. To appear in Phi Delta Kappan.

Reynolds, M.C., & Birch, J. (1982). Teaching exceptional children in all America's schools (revised edition). Reston, VA: Council for Exceptional Children.

Sailor, W., Anderson, J., Halvorsen, A., Doering, K., Filler, J., & Goetz, L. (1989). The comprehensive local school: Regular education for all students with disabilities. Baltimore: Paul H. Brookes.

Sailor, W., Gerry, M., & Wilson, W. (in press). Policy implications of emergent full inclusion models for the education of students with severe disabilities. To appear in T. Husen & T.N. Postlethwaite

(Eds.), International encyclopedia of education: Research and studies (2nd suppl.). Oxford, ENGLAND: Pergamon Press.

Sailor, W., Goetz, L., Anderson, J., Hunt, P., Gee, K., (1988). Research on community intensive instruction as a model for building functional, generalized skills. In R. Horner, G. Dunlap, & R. Koegel (Eds.), Generalization and maintenance: Lifestyle changes in applied settings (pp. 67-98). Baltimore: Paul H. Brookes.

Sailor, W., & Guess, D. (1983). Severely handicapped students: An instructional design. Boston: Houghton Mifflin.

Schnorr, R.F. (1990). "Peter? He come and goes...": First graders' perspectives on a part-time mainstream student. Journal of The Association for Persons with Severe Handicaps, 15(4), 231-240.

Snow, J.A. (1989). Systems of support: A new vision. In S. Stainback, W. Stainback, & M. Forest (Eds.), Educating all students in the mainstream of regular education (pp. 221-231). Baltimore: Paul H. Brookes.

Stainback, S., Stainback, W., & Forest, M. (Eds.) (1989). Educating all students in the mainstream of regular education. Baltimore: Paul H. Brookes.

Stokes, T.F., & Baer, D.M. (1977). An implicit technology of generalization. Journal of Applied Behavior Analysis, 10, 349-367.

Williams, W., Villa, R., Thousand, J., & Fox, W. (1989). Reader response: Is regular class placement really the issue? A response to Brown, Udvari-Solner, Schwarz, VanDeventer, Ahlgren, Johnson, Gruenewald, & Jorgensen. Journal of The Association for Persons with Severe Handicaps, 14(4), 333-334.

York, J., Vandercook, T., MacDonald, C., & Wolff, S. (Eds.) (1989). Strategies for full inclusion. Minneapolis, MN: University of Minnesota, Institute on Community Integration.

Table 1. Student characteristics

Model	Program	Student	Sex	C A	SDS Score*
Full Inclusion	1	Cathy	F	5	4
		Dave	M	10	1
		Evan	M	7	7
Full Inclusion	2	Art	M	7	13
		Ann	F	5	21
Full Inclusion	3	Mark	M	10	8
		Saul	M	10	4
Special Class (Elementary)	4	Manny	M	9	3
		Sam	M	7	6
		Linda	F	8	5
Special Class (Elementary)	5	Arturo	M	9	4
		April	F	10	8
		Bob	M	9	6
Special Class (High School)	6	Alice	F	16	5
		Lauri	F	18	8
		Jeff	M	16	12
Special Class (High School)	7	Joe	M	15	4
		Rhonda	F	16	24
		Terry	M	16	5

*Student Descriptor Scale (Haring, Goetz, & Gee, 1991)

Figure Captions

Figure 1. The rating sheet for the IEP analysis instrument.

Figure 2. IEP analysis by integration model.

Figure 3. Integrated activities analysis by integration model.

Figure 4. Social interactions analysis by integration model.

IEP Analysis

Student: _____ Teacher: _____

Birthdate: _____

INDICATORS OF BEST PRACTICES	DEFINITION	OBJECTIVE / CURRICULUM AREAS(S) 1	2	3	4	5	6	7	8	9	10	11	12	TOTAL #	%
AGE-APPROPRIATE 1) Materials	It would be appropriate for a ND peer of the same chronological age to use the materials. 1)														
2) Task	It would be appropriate for a ND peer of the same chronological age to perform the task. 2)														
FUNCTIONAL 3) Basic Skill	The skill is based on needs identified in 1 of 5 areas: communication, social, behavior, motor, and pre-academic/academic. 3)														
4) Critical Activity	The task must be performed for the S if she can't do it for herself. 4)														
5) Interaction Activity	The activity necessitates the mutual participation of a ND and SD person. 5)														
WILL GENERALIZE TO A VARIETY OF ENVIRONMENTS 6) Taught across settings and materials	The skill facilitates the S's ability to function in a variety of environments; specifically, a basic skill taught within and across critical activities, or a critical activity trained across settings and materials. 6)														
7) Taught in the natural setting	The skill is taught in a way that reflects the manner in which the skill will be used in the natural environment. 7)														
TOTAL POINTS PER OBJECTIVE															

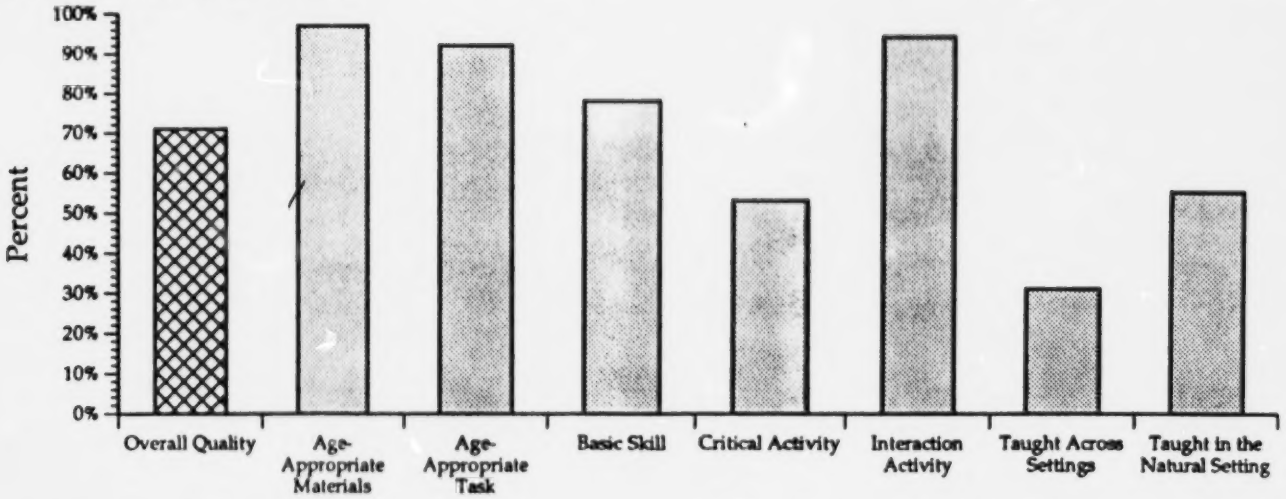
DIRECTIONS:

1) Next to the objective #, indicate the curriculum area(s) with the appropriate letter(s): Communication (C); Social (S); Behavior (B); Motor (M); Domestic (D); Vocational (V); Community (CM); Recreation/Leisure (L); Academic (A).

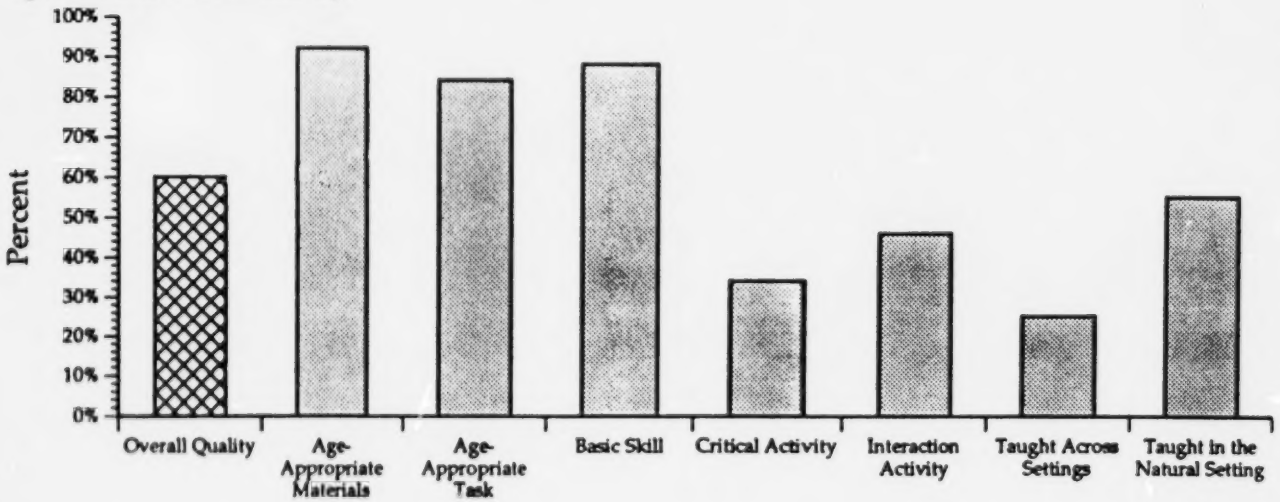
2) Score 1 point for each Indicator included in an objective; 7 points are possible for each objective.

IEP Analysis Sheet; Hunt
12/2/91

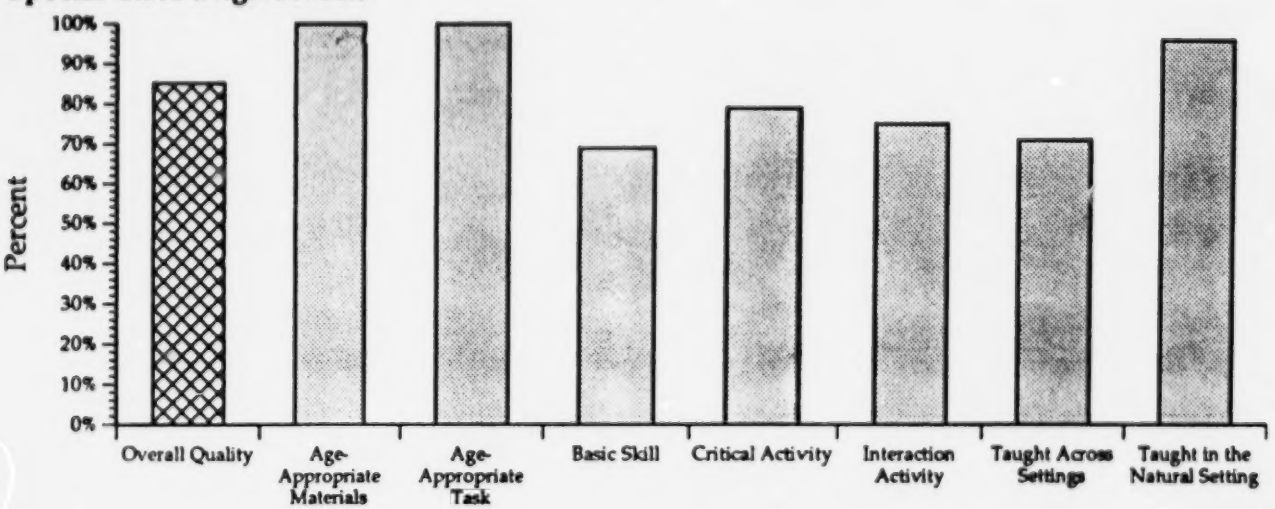
Full Inclusion (Elementary)



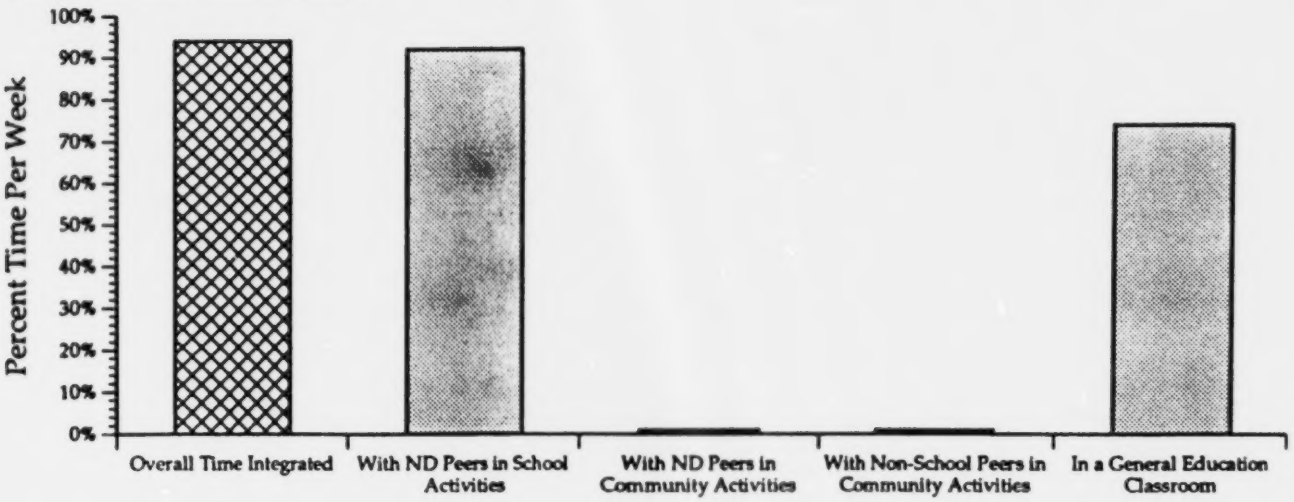
Special Class (Elementary)



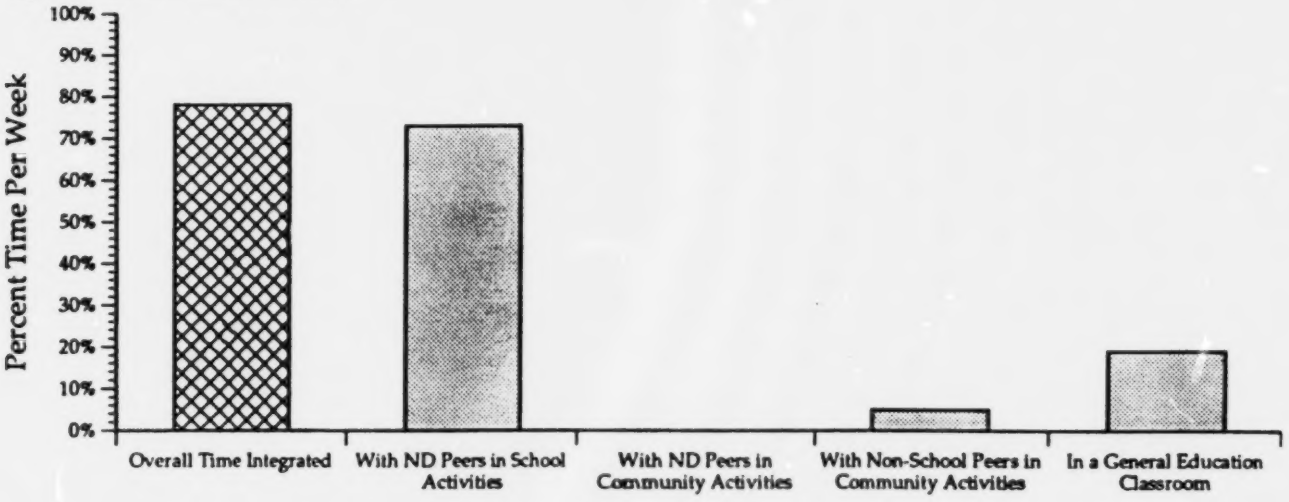
Special Class (High School)



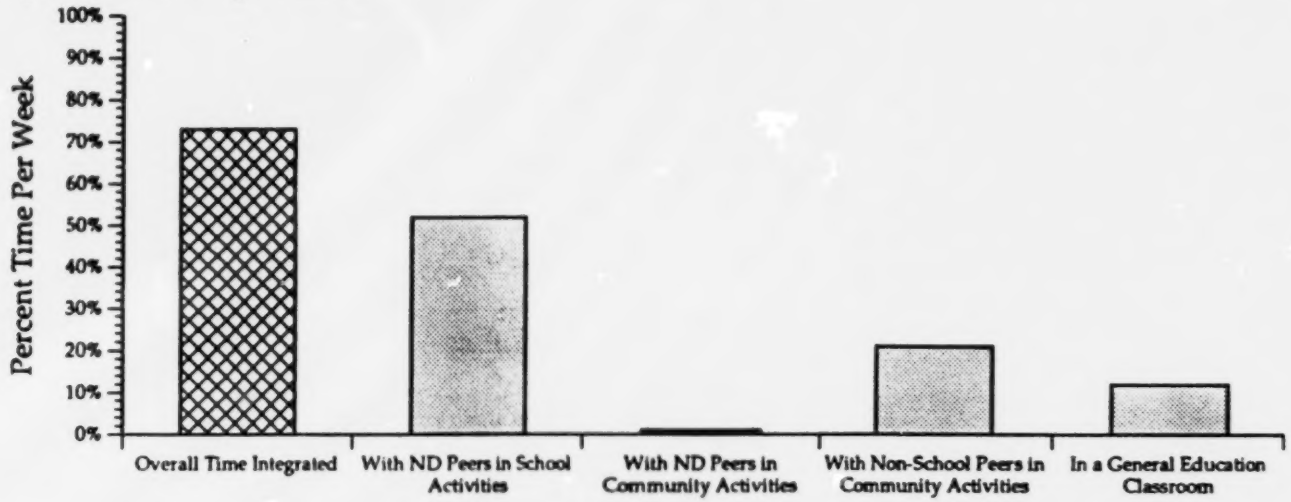
Full Inclusion (Elementary)



Special Class (Elementary)



Special Class (High School)



Reciprocal Interactions